CLAIMS

1. Nozzle arrangement for the treatment of treated material with a treatment medium, whereby the treated material (10) is capable of being conveyed in a conveying plane in a conveying direction (18) from an inlet area (15) to an outlet area (16) of the nozzle arrangement,
characterised by
at least one nozzle aperture (8), which is designed in such a way that a flow of the treatment medium through the nozzle aperture (8) runs at a predetermined angle obliquely in relation to the conveying plane of the treated material (10), so that the flow of the treated medium is deflected into the conveying direction (18) of the treated material (10).

2. Nozzle arrangement according to Claim 1,
characterised in that
the at least one nozzle aperture (8) is formed by at least one nozzle aperture channel, which extends at an acute angle (17) in relation to the conveying plane of the treated material (10).

3. Nozzle arrangement according to Claim 2,
characterised in that
the angle (17) amounts to a maximum of 80°.

4. Nozzle arrangement according to Claim 2 or 3,
characterised in that
the at least one nozzle aperture (8) is designed to emit the treatment medium, and that the angle (17) opens against the conveying direction (18) of the treated material (10).

5. Nozzle arrangement according to Claim 4,
characterised in that
the at least one nozzle aperture (8) is arranged in a housing wall extending

essentially along the conveying plane in such a way that a distance between the at least one nozzle aperture (8) and the inlet area (15) is smaller than a distance between the at least one nozzle aperture (8) and the outlet area (16).

6. Nozzle arrangement according to Claim 2 or 3,
characterised in that
the at least one nozzle aperture (8) is designed to receive the treatment medium, and that the angle (17) opens in the conveying direction (18) of the treated material (10).

7. Nozzle arrangement according to Claim 6,
characterised in that
the at least one nozzle aperture (8) is arranged in a housing wall extending essentially along the conveying plane, in such a way that a distance between the at least one nozzle aperture (8) and the outlet area (15) is smaller than a distance between the at least one nozzle aperture (6) and the inlet area (16).

8. Nozzle arrangement according to any one of the preceding claims,
characterised in that
the nozzle arrangement is designed in such a way that a distance between a housing wall of the nozzle arrangement and the conveying plane decreases in a section between the inlet area (15) and the at least one nozzle aperture (8) in the conveying direction of the treated material (10), so that in this section a channel opening in a wedge shape in the direction of the inlet area (15) is formed between the housing wall and the conveying plane.

9. Nozzle arrangement according to any one of the preceding claims,
characterised in that
the nozzle arrangement is designed in such a way that a distance between a housing wall of the nozzle arrangement and the conveying plane increases in a section between the at least one nozzle aperture (8) and the outlet area in the conveying direction (18) of the treated material (10), so that in this section a

channel is formed which opens in a wedge shape in the direction of the outlet area (16), between the housing wall and the conveying plane.

10. Nozzle arrangement according to any one of the preceding claims, characterised in that
the at least one nozzle aperture (8) extends over a width in a direction perpendicular to the conveying direction (18) along the conveying plane.

11. Nozzle arrangement according to Claim 10, characterised in that
the at least one nozzle aperture (8) is designed in the form of a slot.

12. Nozzle arrangement according to Claim 11, characterised in that
the slot is formed by a housing wall of the nozzle arrangement and by a removable strip (12).

13. Nozzle arrangement according to Claim 11, characterised in that
the slot is delimited on at least one side by a nozzle rail (20), which is located in an adjustable manner at a housing wall of the nozzle arrangement.

14. Nozzle arrangement according to Claim 13, characterised in that
the nozzle rail (20) is exchangeable, in order to be able to select different geometries of the nozzle aperture.

15. Nozzle arrangement according to Claim 13 or 14, characterised in that
the nozzle rail (20) defines a front edge of the nozzle arrangement in the inlet area (15).

16. Nozzle arrangement according to Claim 10,
characterised in that
the at least one nozzle aperture (8) comprises several apertures, which are spaced from one another along the direction perpendicular to the conveying direction (18) and parallel to the conveying plane.

17. Nozzle arrangement according to any one of Claims 10 to 16,
characterised in that
the nozzle arrangement comprises a medium channel (6) extending along at least one nozzle aperture (8) for transport of the treatment medium, which is connected to the at least one nozzle aperture (8) by distribution apertures (7, 9) which are spaced from one another along the at least one nozzle aperture (8).

18. Nozzle arrangement according to Claim 17,
characterised in that
the medium channel (6) is designed in such a way that a passage cross-section of the medium channel (6) decreases as the distance from a connection aperture (1) provided for the delivery or removal respectively of the treatment medium increases.

19. Nozzle arrangement according to Claim 18,
characterised in that
the nozzle arrangement comprises an insertion element (3,3a) arranged in the medium channel (6), the displacement volume of which increases as the distance interval from the connection aperture (1) increases.

20. Nozzle arrangement according to any one of Claims 17 to 19,
characterised in that
the at least one nozzle aperture (8) is formed by at least one nozzle aperture channel, which extends at an acute angle (17) in relation to the conveying plane of the treatment material (10), and
that the distribution apertures (7) are formed by distribution channels, which are

arranged at an angle in relation to the conveying plane of the treated material (10) which is greater than the angle (17) of the nozzle aperture channels in relation to the conveying plane.

21. Nozzle arrangement according to any one of Claims 17 to 20, characterised in that
that the distribution apertures (9) are offset in relation to the at least one nozzle aperture (8) in the conveying direction (18) of the treated material (10).

22. Nozzle arrangement according to any one of the preceding claims, characterised in that
the nozzle arrangement comprises at least one further nozzle aperture (8), which is arranged on a side of the conveying plane of the treated material (10) opposite to the at least one nozzle aperture (8).

23. Nozzle arrangement according to Claim 22, characterised in that
the nozzle arrangement is designed essentially mirror-symmetrical in relation to the conveying plane of the treated material (10).

24. Nozzle arrangement according to any one of the preceding claims, characterised in that
the nozzle arrangement comprises additional nozzle apertures (22, 23), which are designed in such a way as to emit the treatment medium essentially perpendicular to the conveying plane of the treated material (10).

25. Nozzle arrangement according to any one of the preceding claims, characterised in that
the nozzle arrangement is designed for use in a device for the wet-chemical treatment of printed circuit boards or printed circuit films as treated material (10).

26. Device for the wet-chemical treatment of printed circuit boards or printed circuit films
characterised by
a nozzle arrangement according to any one of the preceding claims.

27. Method for the treatment of treated material with a treatment medium, whereby the treated material (10) is moved in a conveying plane in a conveying direction (18) from an inlet area (15) to an outlet area (16) of a nozzle arrangement,
characterised in that
the method comprises:
- deflection of a flow of the treatment medium, which is emitted or received by a nozzle aperture (8) of the nozzle arrangement, into the conveying direction (18) of the treated material (10).

28. Method according to Claim 27,
characterised in that
the treatment medium is emitted or received at a predetermined acute angle of 1-30° in relation to the conveying plane of the treated material (10).

29. Method according to Claim 28,
characterised in that
the angle (17) amounts to a maximum of 80°.

30. Method according to any one of Claims 27-29,
characterised in that
the method comprises:
- adaptation of the shaping of the nozzle arrangement in order to specifically create a negative pressure in at least one defined area of a treatment channel of the nozzle arrangement.

31. Method according to Claim 30,
characterised in that
the negative pressure is created in the inlet area (15) of the nozzle arrangement, in order for treatment medium to be drawn in from the surroundings of the inlet area (15).

32. Method according to any one of Claims 27-31,
characterised in that
the method comprises:
- adaptation of the shaping of the nozzle arrangement in order to adjust the flow rate of the treatment medium.

33. Method according to any one of Claims 27-32,
characterised in that
the method comprises:
- adaptation of the shaping of the nozzle arrangement and of the positions of the nozzle aperture (8) and at least one additional nozzle aperture (22; 23) in such a way that, in specific areas of the nozzle arrangement, a negative pressure is created on one side of the treated material and a positive pressure is created on the opposite side.

34. Method according to any one of Claims 27-33,
characterised in that
the method comprises:
- controlling the flow of the treatment medium which is supplied to the nozzle arrangement.

35. Method according to any one of Claims 27-34,
characterised in that
the method comprises:
- controlling the pressure of the treatment medium which is supplied to the nozzle arrangement.

36. Method according to any one of Claims 27-35,
characterised in that
the nozzle arrangement is designed in accordance with one of Claims 1-26.